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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,392	01/28/2004	Gerald Elson	GP- 302896	3326

7590

12/29/2005

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EXAMINER

BOTTORFF, CHRISTOPHER

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,392	ELSON ET AL.	
	Examiner	Art Unit	
	Christopher Bottorff	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 and 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-16 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/28/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of invention I, direct to the tank and frame combination disclosed in relation to Figure 1, and frame species A, directed to the frame assembly disclosed in relation to Figure 2, in the reply filed on Dec 5, 2005 is acknowledged. The traversal is on the ground that some of the claims, particularly claims 1-18 and 22-26, are generic. This is not found persuasive because not all of the claims are generic to the elected invention and frame species, and the consideration of the claims on the merits will be limited to the one elected invention and frame species. Also, Inventions I and II present a different number and arrangement of fuel tanks, and each presents a different frame arrangement to accommodate the corresponding tank arrangement. These differences render the restriction between inventions I and II as proper and necessary.

Applicants recognize that claims 19-21 are not generic to the elected invention and species, which demonstrates that restriction of the examination of the claims is proper. Moreover, claims 4-8, 17, and 18 are directed to non-elected frame assembly species. None of the features defined in claims 4-8, 17, and 18 are disclosed in relation to the frame species of Figure 2, but in relation to at least one of the frame species of Figures 3-5.

The requirement is still deemed proper and is therefore made FINAL.

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Claims 4-8 and 17-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention or species of the nonelected invention, there being no allowable generic or linking claim. Claims 1-3, 9-16, and 22-26 have been considered.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on January 28, 2004 was considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fowkes et al. US 4,339,015.

Fowkes et al. disclose, in a motor vehicle of the type having a frame assembly 14, 17, a set of wheels 16 rotatably supported on the frame assembly and a power train 22, 25, 26, 29, 31, 32, 33 operable to drive at least one of the set of wheels. See Figure 2. A fluid storage volume is defined in an elongated rail portion of the frame assembly. See Figure 2 and column 2, lines 42-46. The fluid storage volume is in fluid

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communication with the power train to provide an operational fluid, in the form of fuel, to the power train. See column 2, lines 42-46.

The frame assembly is rectangular at portion 17 and comprises a plurality of elongated rail portions, including two longitudinal frame rails along the sides of the vehicle and two cross frame rails that are each at the front and rear of the vehicle respectively. See Figure 2. The fluid storage volume is defined within at least two of the plurality of elongated rail portions, particularly the two longitudinal frame rails. See Figure 2. Also, the power train includes a motor 31 that is electrically connected to an internal combustion engine 26 to convert electrical energy into rotary movement of a shaft coupled to the set of wheels. See column 2, lines 36-41 and 50-57.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fowkes et al. US 4,339,015 in view of Short US 6,453,885.

Fowkes et al. do not disclose that a liner is formed in the fluid storage volume. However, Short teaches the desirability of providing a liner 34 in a fluid storage volume that accommodates fuel. See Figure 2 and column 3, lines 11-15. From the teachings of Short, forming a liner in the fluid storage volume of Fowkes et al. would have been

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obvious to one of ordinary skill in the art at the time the invention was made. This would help to contain the fuel within the fluid storage volume and reduce the occurrence of opportunities for leakage.

Claims 2, 3, 14-16, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowkes et al. US 4,339,015 in view of Riemer et al. US 5,662,184.

The vehicle of Fowkes et al. utilizes a an internal combustion engine system provided with fuel directly from the fluid storage volume, rather than a fuel cell system that converts hydrogen-containing fuel and an oxidant into electrical energy.

However, Riemer et al. teach the desirability of generating electrical energy to power a motor through the use of a fuel cell system, and not an internal combustion engine system. See Figures 1a and 1b and column 2, lines 4-11. The fuel cell system of Reimer et al. comprises a fuel cell 15 operable to convert a hydrogen containing fuel and an oxidant into electrical energy; a radiator 33 in fluid communication with the fuel cell for cooling the fuel cell via a cooling fluid; and a methanol fuel tank 17 in fluid communication with the fuel cell via a reforming system to provide a primary source of the hydrogen-containing fuel to the fuel cell. See column 2, lines 12-27.

From the teachings of Reimer et al., generating electricity in the vehicle of Fowkes et al. with a fuel cell system rather than an internal combustion engine system would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help to reduce emissions that are harmful to the environment. The vehicle resulting from this modification would have a methanol fuel tank supported on

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the frame assembly and in fluid communication with the power train such that the fluid storage volume is a reserve tank. The hydrogen resulting from the reforming process, serving as the operational fluid, may be stored in the reserve tank until needed. Also, since the space within the frame rails is substantially less than the space within the methanol fuel tanks, the fluid storage volume is substantially less than the fuel tank volume.

Claims 9, 10, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowkes et al. US 4,339,015 in view of Riemer et al. US 5,662,184 as applied to claims 1 and 14 above, and further in view of Finamore US 6,969,545.

Fowkes et al., as modified by Riemer et al., do not disclose that the fluid storage volume has a liner or that the fluid storage volume is filled with a hydrogen storage media. However, Finamore teaches the desirability of providing a fluid storage volume adapted to contain hydrogen with a liner 20 and a hydrogen storage media 30. See Figure 1; column 1, lines 58-61; and column 2, lines 24-31. From the teachings of Finamore, providing the fluid storage volume of Fowkes et al., as modified by Riemer et al., with a liner would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help to protect the shell of the fluid storage volume and help facilitate heat transfer. From the further teachings of Fowkes et al., filling the fluid storage volume of Fowkes et al., as modified by Riemer et al., with a hydrogen storage media would have been obvious to one of ordinary skill in the art at the time the

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invention was made. This would aid in storing the hydrogen produced by the methanol reforming process until the hydrogen is needed by the fuel cell.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bennink, Smith US 5,727,815, Shimizu, Smith US 5,908,204, and Richardson disclose vehicle frame rails comprising a fluid storage volume. Bees et al., Nagura et al., and Tabata disclose vehicles with fuel cell systems. Freeman et al. disclose a fuel tank with a liner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

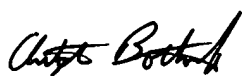
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Christopher Bottorff". The signature is stylized with a large, sweeping initial "C" and a long, horizontal stroke extending to the right.

Christopher Bottorff